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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,847	10/30/2003	Gordon A. Dressler	P1550	9315

7590 06/23/2005
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EXAMINER

COLLINS, TIMOTHY D

ART UNIT PAPER NUMBER

3643

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,847

Applicant(s)

DRESSLER, GORDON A.

Examiner

Timothy D. Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-40 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 21-40, drawn to a process for an ion thruster, classified in class 244, subclass 164.
 - II. Claims 1-20, drawn to an ion thruster system, classified in class 244, subclass 166.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus may be used in a different process, for example a process of providing heat.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

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5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. Once the above has been chosen, one of the following election of species must be chosen.

7. This application contains claims directed to the following patentably distinct species of the claimed invention:

- a. Species A: 1 annular ion thruster fixedly mounted (approx. claim 8)
- b. Species B: 2 ion thrusters (approx. claim 4 or 6 depending on the sub-species)
- c. Species C: 4 ion thrusters (approx. claim 5 or 7 depending on the sub-species) (skip to paragraph 9)

8. When one of either A or B is chosen above, the following must also be chosen. If Species C is chosen above, skip to the next Sub-species choices (paragraph 9 below).

- (1) Sub-species 1: rotatably mounted thruster
- (2) Sub-species 2: fixedly mounted thruster

9. Next, one of the following sub2-species must be chosen: note, these are from claim 20, and refer to the location of the thruster on the craft.

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- (a) Sub2-species a: thruster is outboard
- (b) Sub2-species b: thruster is inboard

10. Next, one of the following sub3-species must be chosen: note, these are from claim 15, and refer to the type of permeable electrical members.

- (i) Sub3-species I: pair of electrical grids
- (ii) Sub3-species II: pair of porous electromagnetic structures

11. Next, one of the following sub4-species must be chosen: note, these are from claim 11, and refer to the use of the thruster in or out of orbit around a body. Note also the examiner takes these to be two distinct choices, for example in orbit (about a celestial body for example in the solar system) and not in orbit (but freely moving about in interstellar space).

- 1) Sub4-species A: orbit proximal a celestial body with an atmosphere
- 2) Sub4-species B: free trajectory

12. Next, one of the following sub5-species must be chosen: note, these are from approximately claims 12-14, where there is an additional device attached.

- a) Sub5-species 1: ionizing device, go to paragraph 13.

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b) Sub5-species 2: electromagnetic field modifying device, skip to paragraph 14.

c) Sub5-species 3: both of an ionizing device and an electromagnetic field modifying device, skip to paragraph 15.

13. Next, if Sub5-species 1 is chosen, chose from the following (approximately in claim 12).

- d. Sub5-species 1a: electron bombardment ionizer
- e. Sub5-species 1b: RF ionizer
- f. Sub5-species 1c: microwave ionizer
- g. Sub5-species 1d: extreme UV ionizer
- h. Sub5-species 1e: flash lamp ionizer
- i. Sub5-species 1f: magnetic field ionizer

14. Next, if Sub5-species 2 is chosen, chose from one of the following (from claim 13).

- j. Sub5-species 2a: permanent magnet
- k. Sub5-species 2b: electromagnetic field projector

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15. Next, if Sub5-species 3 above is chosen, chose from one of the choices in paragraph 13 and also one of the choices in paragraph 14.

An example of a proper reply to this action is as follows.

I elect: invention II, species A, sub-species 1, sub2-species b, sub3-species I, sub4-species A, sub5-species 3 with (sub5species 1b and sub5-species 2b)

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

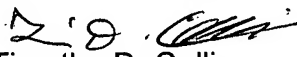
Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy D. Collins whose telephone number is 571-272-6886. The examiner can normally be reached on M-F, 7:00-3:00, with every other Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter M. Poon can be reached on 571-272-6891. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Timothy D. Collins
Patent Examiner
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